WHAT IS CLAIMED IS:

1. An oxidation sensor for an electrical circuit, comprising:

a conductor located on an insulating substrate; and

a sensor trace located on the insulating substrate adjacent the conductor and configured to oxidize at a rate greater than an electrical component associated with the sensor trace when the sensor trace and the electrical component are exposed to a same oxidizing environment.

2. The oxidation sensor as recited in Claim 1 wherein the sensor trace is configured to have a positive potential greater than a potential of the conductor in the presence of an applied voltage.

3. The oxidation sensor as recited in Claim 1 wherein the sensor trace is located a distance from the conductor of about 2 μm or less.

4. The oxidation sensor as recited in Claim 1 wherein the conductor is a grounded conductor.

5. The oxidation sensor as recited in Claim 1 wherein the

sensor trace comprises a conductive material selected from the group consisting of:

titanium,

copper,

tungsten,

aluminum, and

tantalum

6. The oxidation sensor as recited in Claim 1 wherein the sensor trace comprises silicon.

7. The oxidation sensor as recited in Claim 1 further including bonds pads connected to the sensor trace.

8. The oxidation sensor as recited in Claim 1 wherein the sensor trace has a serpentine configuration.

9. The oxidation sensor as recited in Claim 9 wherein the serpentine configuration includes a pattern of angles.

10. The oxidation sensor as recited in Claim 10 wherein the angles range from about 25 degrees to about 175 degrees.

11. The oxidation sensor as recited in Claim 1 wherein the

sensor trace and conductor have a serpentine configuration.

12. The oxidation sensor as recited in Claim 1 wherein the oxidation sensor is capped by a grounded roof layer.

13. The oxidation sensor as recited in Claim 1 wherein the sensor trace is unpassivated.

14. The oxidation sensor as recited in Claim 1 wherein the oxidizing environment includes a relative humidity of greater than 50% and voltages of greater than 10 volts.

15. The oxidation sensor as recited in Claim 1 wherein the sensor trace has a width less than 2 microns.

16. A method of manufacturing an oxidation sensor for an electrical circuit, comprising:

forming a conductor on insulating substrate; and

forming a sensor trace located on the insulating substrate adjacent the conductor and configured to oxidize at a rate greater than an electrical component associated with the sensor trace and the electrical component are exposed to a same oxidizing environment.

17. The method as recited in Claim 16 wherein forming the sensor trace includes forming the sensor trace so that the sensor trace is configured to have a positive potential greater than a potential of the conductor in the presence of an applied voltage.

18. The method as recited in Claim 16 wherein forming the sensor trace includes forming the sensor trace so that the sensor trace is located at a distance from the conductor of about 2 μm or less.

19. The method as recited in Claim 16 wherein forming the conductor includes forming a grounded conductor.

20. The method as recited in Claim 16 wherein forming the

sensor trace includes forming the sensor trace so that the sensor trace comprises a conductive material selected from the group consisting of:

titanium,

copper,

tungsten,

aluminum, and

tantalum.

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~~19~~. The method as recited in Claim 16 wherein forming the sensor trace includes forming the sensor trace so that the sensor trace comprises silicon.

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~~20~~. The method as recited in Claim 16 wherein forming a sensor trace includes forming bonds pads connected to the sensor trace.

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~~21~~. The method as recited in Claim 16 wherein forming the sensor trace includes forming the sensor trace with a serpentine configuration.

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~~22~~. The method as recited in Claim ~~21~~ 23 wherein forming the sensor trace with a serpentine configuration includes forming a pattern of angles.

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~~23~~. The method as recited in Claim ~~22~~ 24 wherein forming a pattern of angles includes forming a pattern of angles so that the angles range from about 25 degrees to about 175 degrees.

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~~24~~. The method as recited in Claim 16 wherein forming the sensor trace and conductor include forming the sensor trace and conductor include forming them into a serpentine configuration.

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~~25~~. The method as recited in Claim 16 wherein forming the the oxidation sensor includes forming the oxidation sensor such that it is capped by a grounded roof layer.

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~~26~~. The method as recited in Claim 16 wherein forming the sensor trace includes forming an unpassivated sensor trace.

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~~27~~. The method as recited in Claim 16 wherein exposing the sensor trace and the electrical component to an oxidizing environment includes a relative humidity of greater than 50% and voltages of greater than 10 volts.

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~~28~~. The method as recited in Claim 16 wherein forming the sensor trace includes forming the sensor trace such that a width of the sensor trace is less than 2 microns.

31. A micro-electromechanical device, comprising:

an actuator;

an actuation mechanism;

an electrical component; and

an oxidation sensor, comprising:

a conductor located on an insulating substrate; and

a sensor trace located on the insulating substrate adjacent the conductor and configured to oxidize at a rate greater than the electrical component trace when the sensor trace and the electrical component are exposed to a same oxidizing environment.

32. The oxidation sensor as recited in Claim 31 wherein the sensor trace is configured to have a positive potential greater than a potential of the conductor in the presence of an applied voltage.

33. The oxidation sensor as recited in Claim 31 wherein the sensor trace is located a distance from the conductor of about 2 μm or less.

34. The oxidation sensor as recited in Claim 31 wherein the conductor is a grounded conductor.

35. The oxidation sensor as recited in Claim 31 wherein the

sensor trace comprises a conductive material selected from the group consisting of:

titanium,

copper,

tungsten,

aluminum, and

tantalum.

R126 36 34. The oxidation sensor as recited in Claim 31 29 wherein the sensor trace comprises silicon.

R126 37 35. The oxidation sensor as recited in Claim 31 29 further including bonds pads connected to the sensor trace.

R126 38 36. The oxidation sensor as recited in Claim 31 29 wherein the sensor trace has a serpentine configuration.

R126 39 37. The oxidation sensor as recited in Claim 38 36 wherein the serpentine configuration includes a pattern of angles.

R126 40 38. The oxidation sensor as recited in Claim 39 37 wherein the angles range from about 25 degrees to about 175 degrees.

R126 41 39. The oxidation sensor as recited in Claim 31 29 wherein the

sensor trace and conductor have a serpentine configuration.

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~~40~~. The oxidation sensor as recited in Claim ~~29~~ 31 wherein the oxidation sensor is capped by a grounded roof layer.

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~~41~~. The oxidation sensor as recited in Claim ~~29~~ 31 wherein the electrical component and the sensor trace are unpassivated.

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~~42~~. The oxidation sensor as recited in Claim ~~29~~ 31 wherein the oxidizing environment includes a relative humidity of greater than 50% and voltages of greater than 10 volts.

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~~43~~. The oxidation sensor as recited in Claim ~~29~~ 31 wherein the sensor trace has a width less than 2 microns.